

MEC-USB-M002

Mini PCI-e 2-port USB 3.0 board

User's Manual

Third Edition, February 2014



© 2014 Cervoz Co., Ltd. All rights reserved.

Reproduction without permission is prohibited

Mini PCI-e USB Card

User's Manual

The software described in this manual is furnished under a license agreement and may be used only in accordance with the terms of that agreement.

Copyright Notice

© 2014 Cervoz Co., Ltd. All rights reserved. Reproduction without permission is prohibited.

Trademarks

Cervoz is a registered trademark of Cervoz Co., Ltd. All other trademarks or registered marks in this manual belong to their respective manufacturers.

Disclaimer

Information in this document is subject to change without notice and does not represent a commitment on the part of Cervoz.

Cervoz provides this document "as is," without warranty of any kind, either expressed or implied, including, but not limited to, its particular purpose. Cervoz reserves the right to make improvements and/or changes to this manual, or to the products and/or the programs described in this manual, at any time.

Information provided in this manual is intended to be accurate and reliable. However, Cervoz assumes no responsibility for its use, or for any infringements on the rights of third parties that may result from its use.

This product might include unintentional technical or typographical errors. Changes are periodically made to the information herein to correct such errors, and these changes are incorporated into new editions of the publication.

Technical Support Contact Information

<http://www.cervoz.com/support/technical.php>

Cervoz Co., Ltd.

Tel: +886-2-2911-9599

Fax: +886-2-2911-9566

Table of Contents

Chapter 1	Introduction	4
	Overviews	4
	Features	4
	Installation Flowchart	5
	Package Checklist	5
Chapter 2	Hardware Installation	6
Chapter 3	Software Installation	13
Appendix	Pin Assignments	20
	Board Side Pin Assignments	21
	Device Side Pin Assignments	21
	Technical Reference	22
	MEC-USB-M002 Specifications	22
	MEC-USB-M002 Dimensions	23
	MEC-USB-M002 Daughter Board Dimensions	23
	Product Warranty Statement	24

1

Introduction

Overview

MEC-USB-M002 is a USB 3.0 card for embedded PC. The card follows the Mini PCI-e standard which is compliant with PCI Express x 1 classification and small form factor (30.00 x 50.95 mm). This board fits in any host computer that has Mini PCI-e card slots.

Features

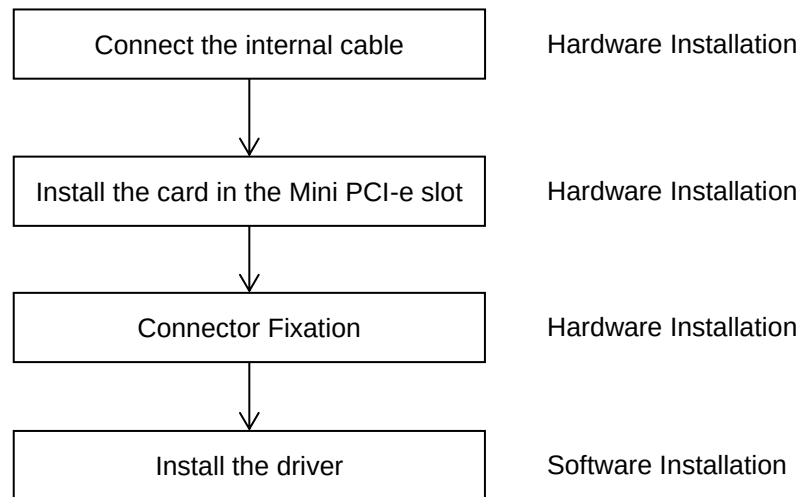
The PCI Express boards have the following outstanding features:

- Single-Lane (x1) PCI-Express with throughput up to 5.0/2.5Gbps
- Fully compliant with PCI-Express Base Specification Rev 2.0
- Two USB3.0 Super-Speed ports
- Support simultaneous operation of multiple USB 1.1, USB 2.0, and USB 3.0 devices
- USB data transfer rate of 1.5/12/480/5000 Mbps
- Universal Serial Bus 3.0 specification Revision 1.0 compliant
- Support Hot-Swap function

Installation Flowchart

Installation Flowchart of MEC-USB-M002

The following flowchart provides a brief summary of the procedure you should follow to install the Mini PCI-e card:



Package Checklist

The following items are included in the Mini PCI Express board Package:

- Mini PCI-e Card x 1
- Daughter Board x 1
- Bracket x 1
- M2.5 Screw x 2
- 20Pin Internal Cable (30cm) x 1
- Quick Installation Guide (Printed) x 1
- Driver CD x 1

Note: Notify your sales representative if any of the above items are missing or damaged.

2

Hardware Installation

This chapter describes the PCI Express Series hardware installation procedure. Since the BIOS automatically assign the PCI Express board's IRQ number and I/O addresses, you must plug in the board before installing the driver.

Step 1 **Connect the internal cable to the card**

Connect the internal cable to the card



Note

Both sides of the cable connectors are the same, it doesn't matter which side you connect

Step 2

Install the card to the Mini PCI-e slot



Make sure you install the card in the right position (fool-proof design)

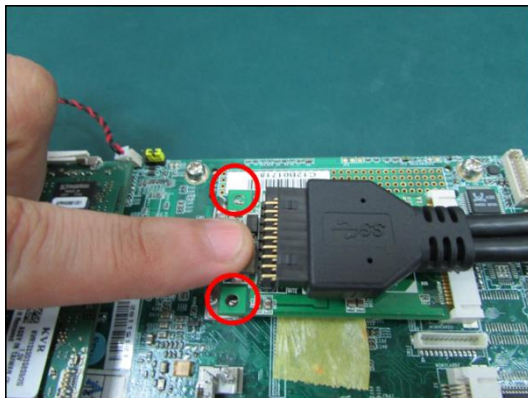
Step 3

Fix the card on the motherboard (clip type or screw type)

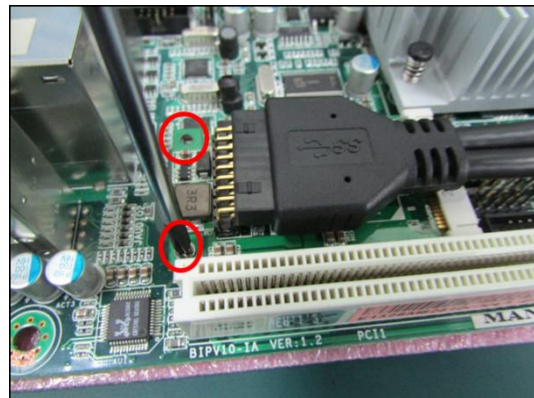
There are 2 options to fix the card. It depends on the design of the motherboard (clip or screw).

1. Clip type: make sure you press down the card and let the clips fix the card
2. Screw type: make sure you tighten up the screws to fix the card

Clip type



Screw type



Step 4 Card installation completed

Clip type

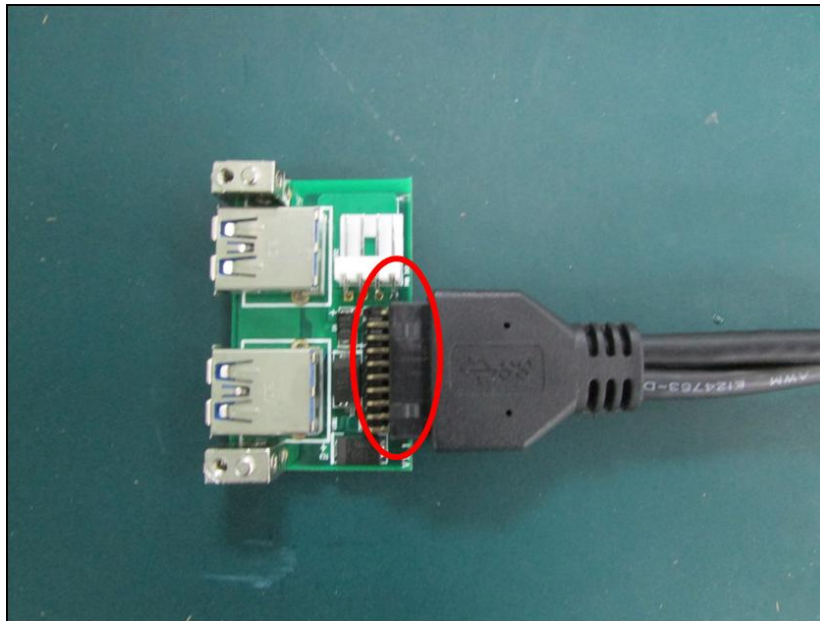


Screw type



Step 5 Connect the cable to the daughter board

Connect other side of the cable to the daughter board and connect the power cable to the daughter board



Note

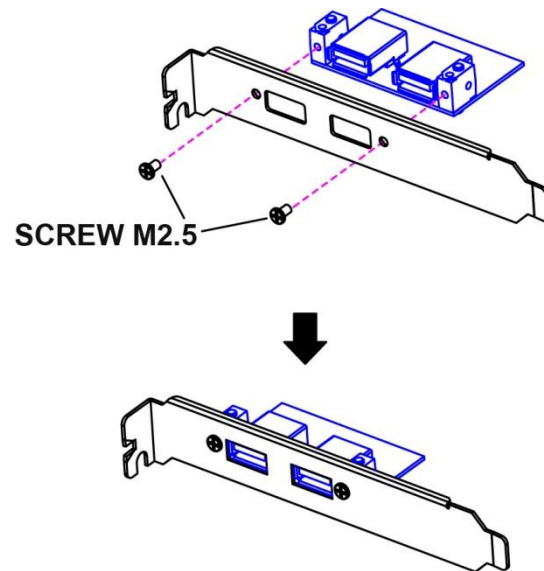
Both sides of the cable connectors are the same, it doesn't matter which side you connect

Connector Fixation

MECFIX – Versatile Mounting

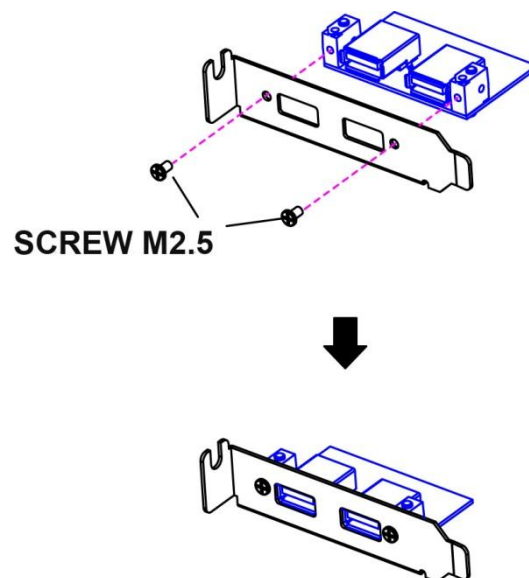
1. Standard PCI/PCIe Bracket

PCI / PCIe IO Bracket



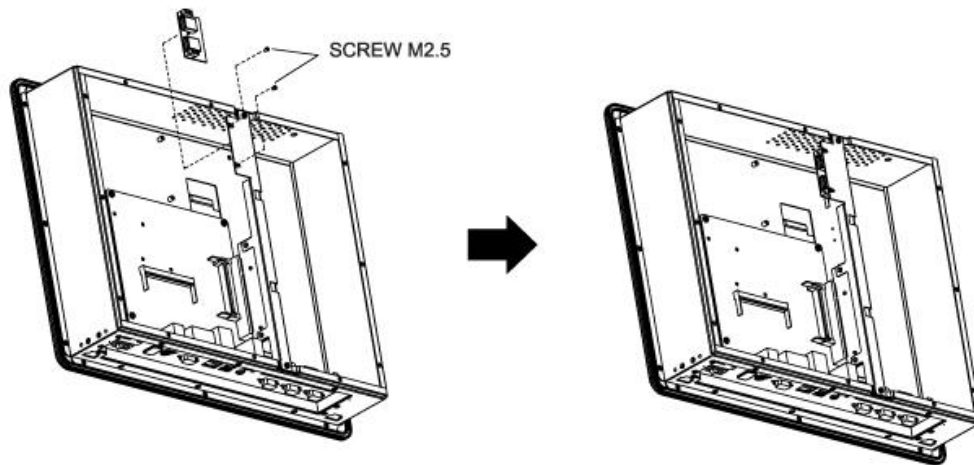
2. Low Profile PCI/PCIe Bracket

Low Profile IO Bracket

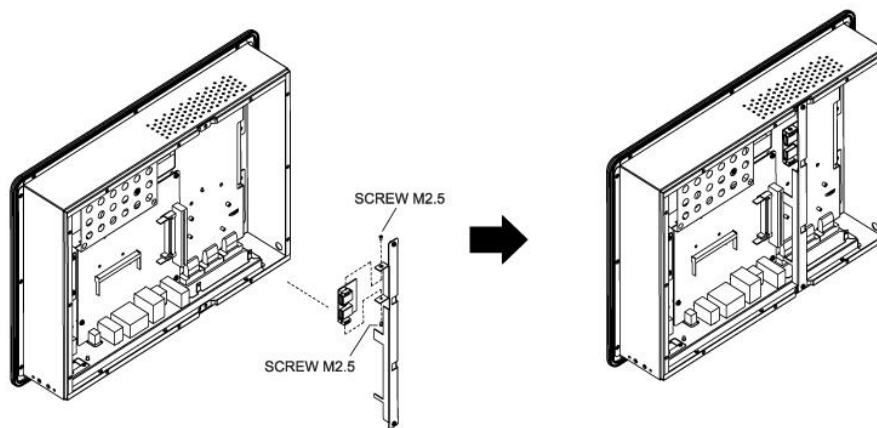


3. Internal Mounting

Upper Fixation – Industrial System

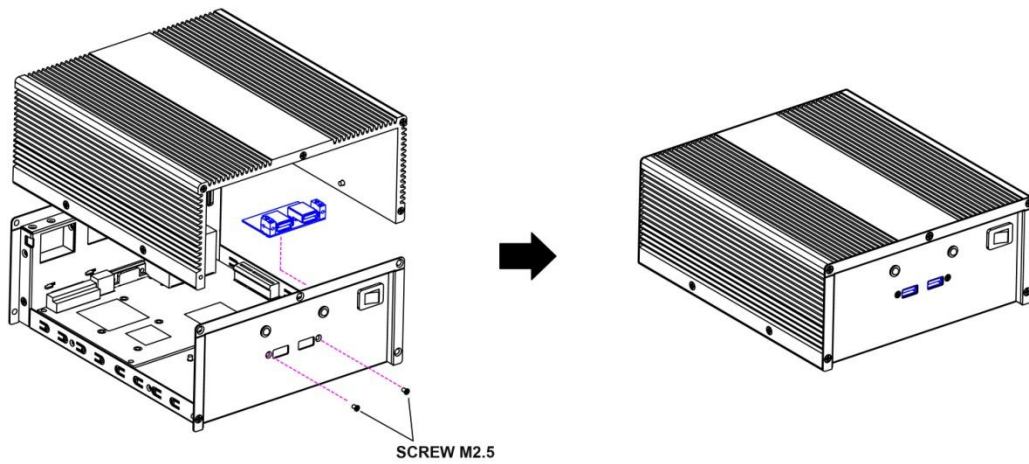


Right & Left Fixation –Industrial System

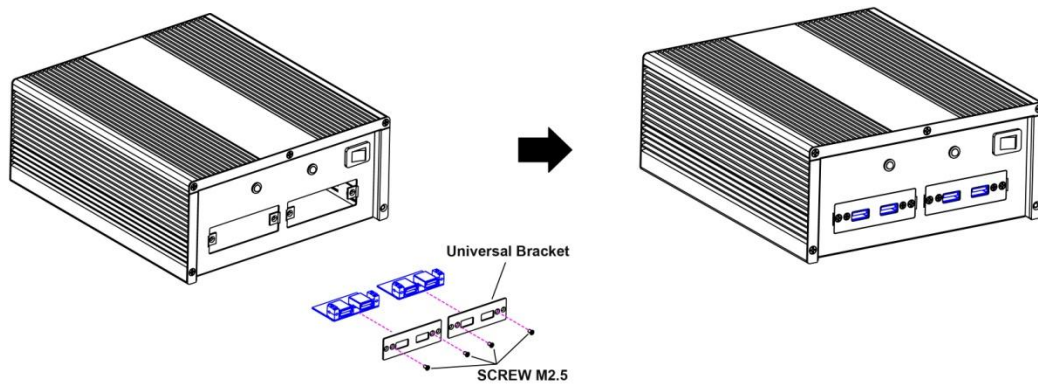


4. Customized Front / Rear Plate

Front / Rear I/O Plate



Universal Bracket

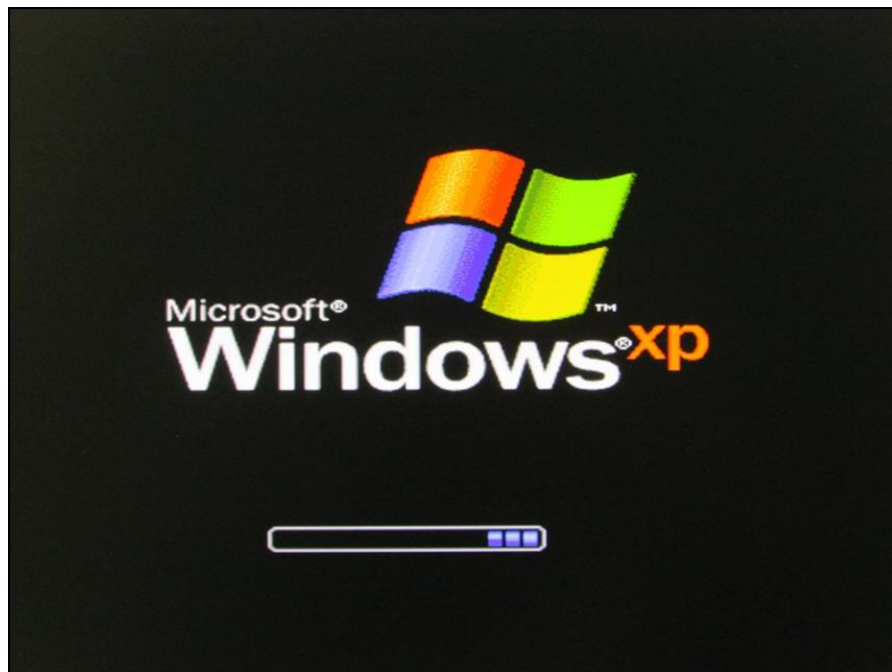


3

Software Installation

This chapter gives installation, configuration, and update/removal procedures for the driver for Win 2003, Win XP, Win Vista, Win 7, and Win 8.

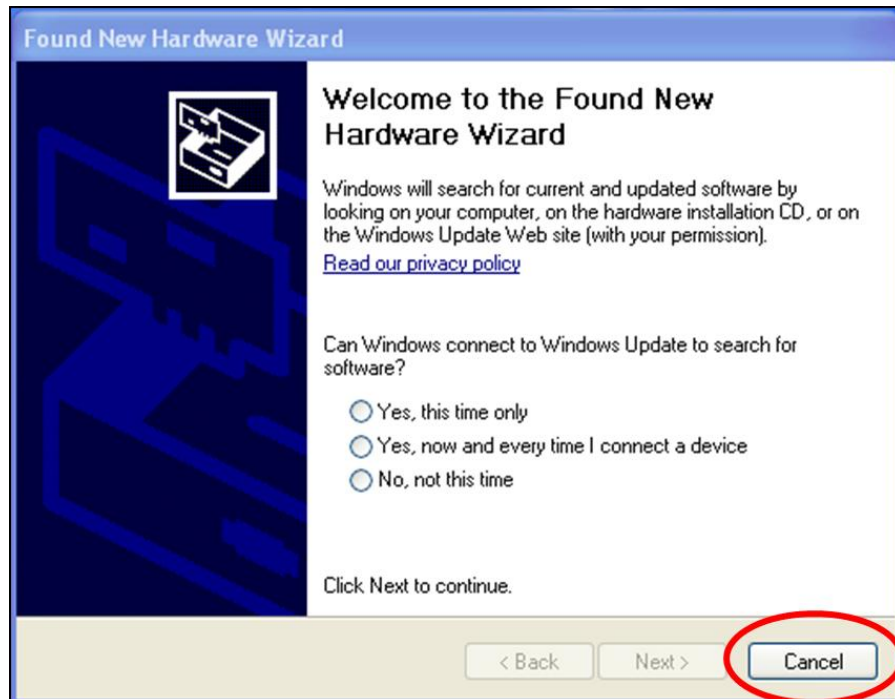
Step 1 Turn on PC and start Windows



Note XP OS as example

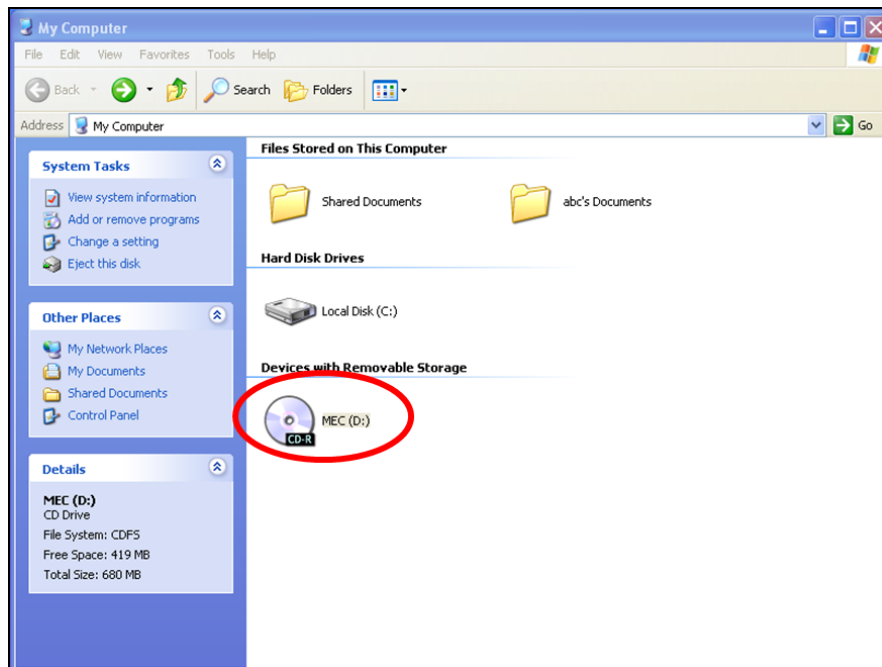
Step 2 Windows automatically detects the new device

1. If the card is installed properly, system would detect the new device and the hardware wizard would start automatically.
2. Click "Cancel" to disregard



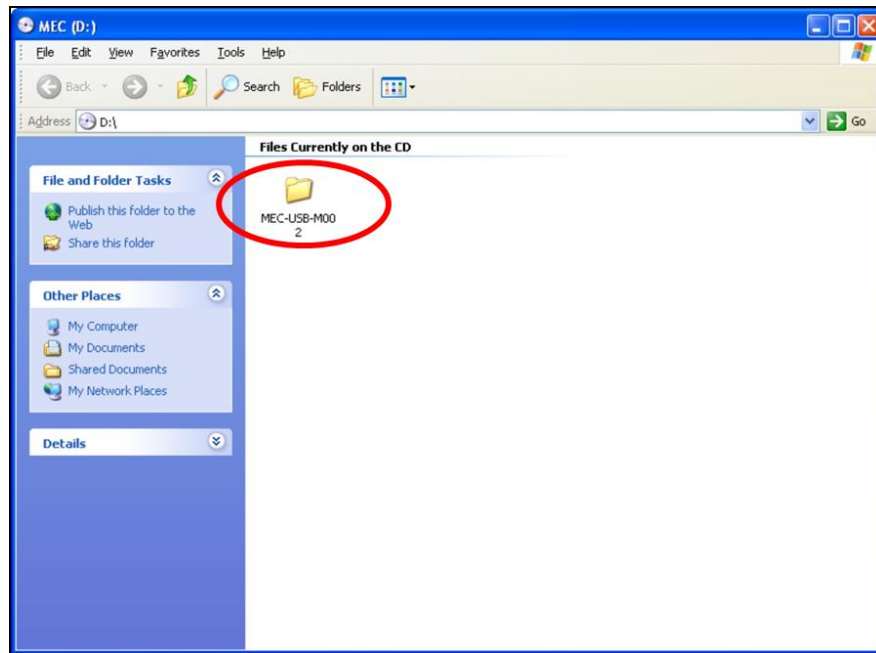
Step 3 Insert CD

Open the CD drive



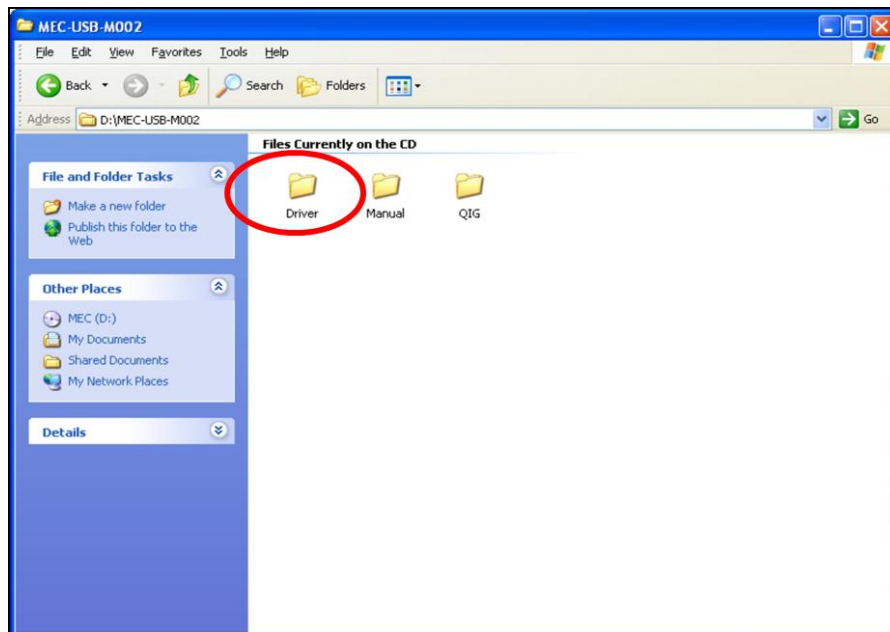
Step 4 Find the “MEC-USB-M002” folder

Open the “MEC-USB-M002” folder



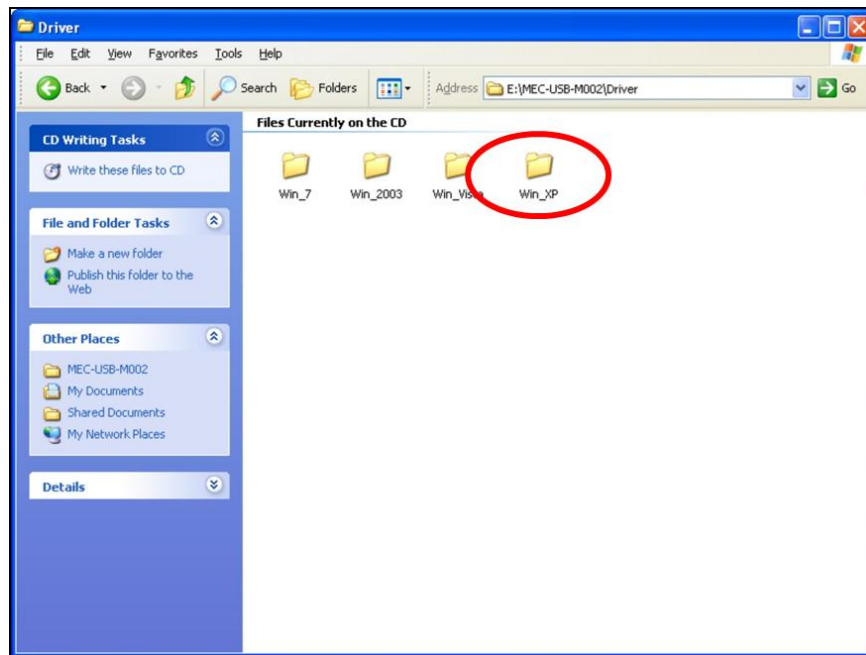
Step 5 Find the “Driver” folder

Open the “Driver” folder



Step 6 Find the appointed OS folder (Ex.: XP)

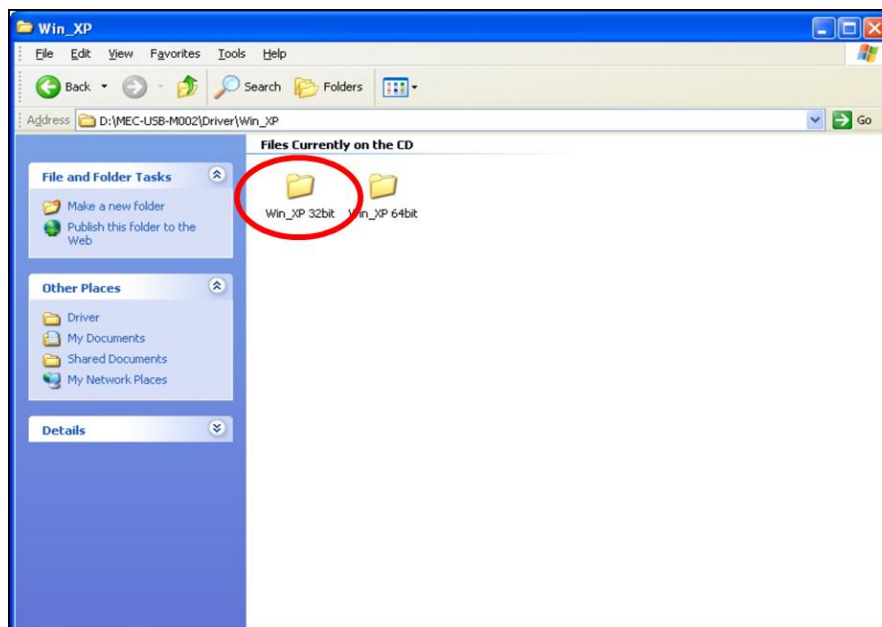
Open the appointed OS folder (We use XP as an example in the above picture)



Make sure you select the correct OS

Step 7 Find your OS version (Ex.: XP 32bit)

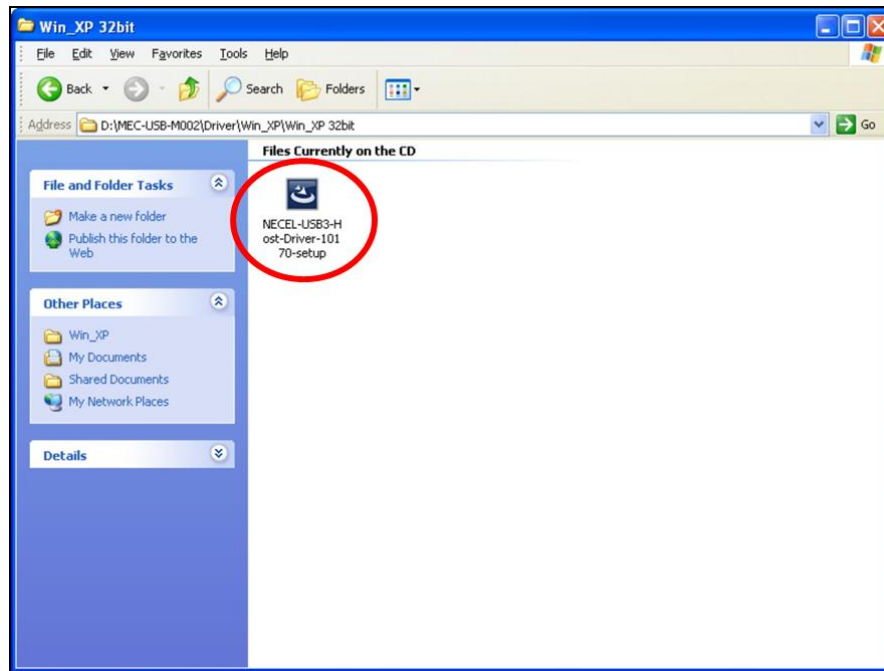
Select appoint OS folder (We use XP 32bit as an example in the above picture)



Make sure you select the correct version of the OS (Ex.: 32-bit or 64-bit)

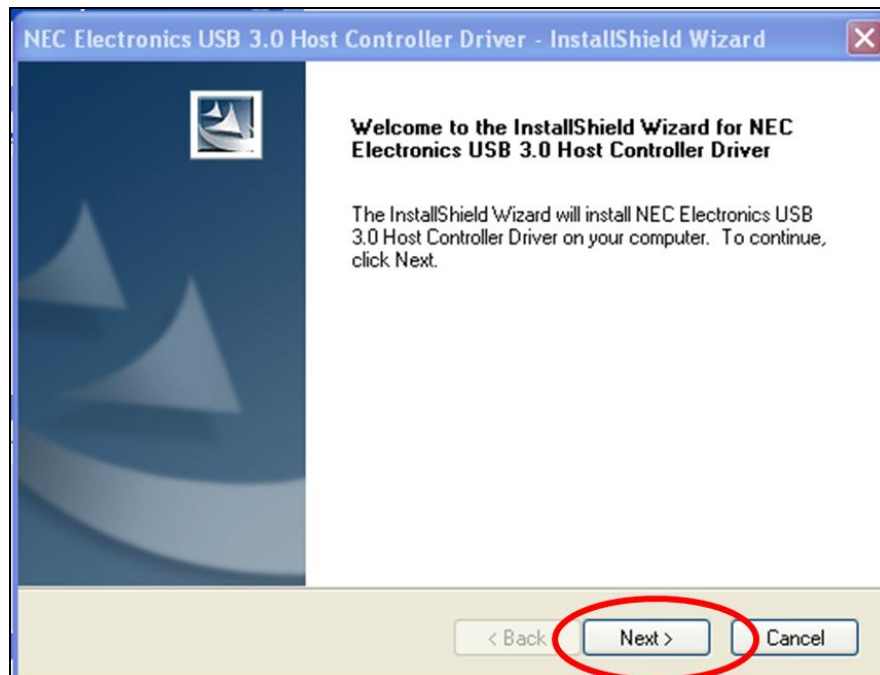
Step 8 Find the “setup” file

Run the “set up” file



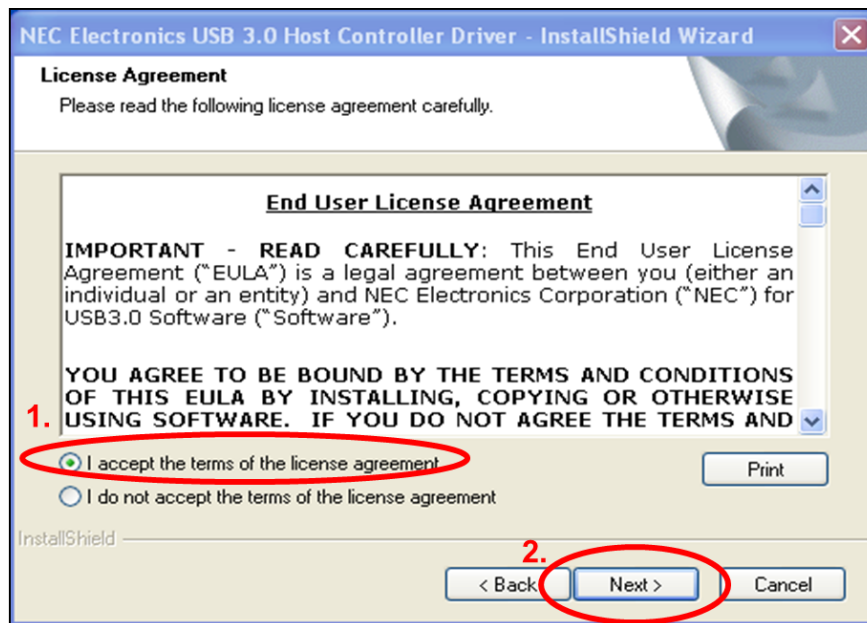
Step 9 Driver installation set up

Click “Next”



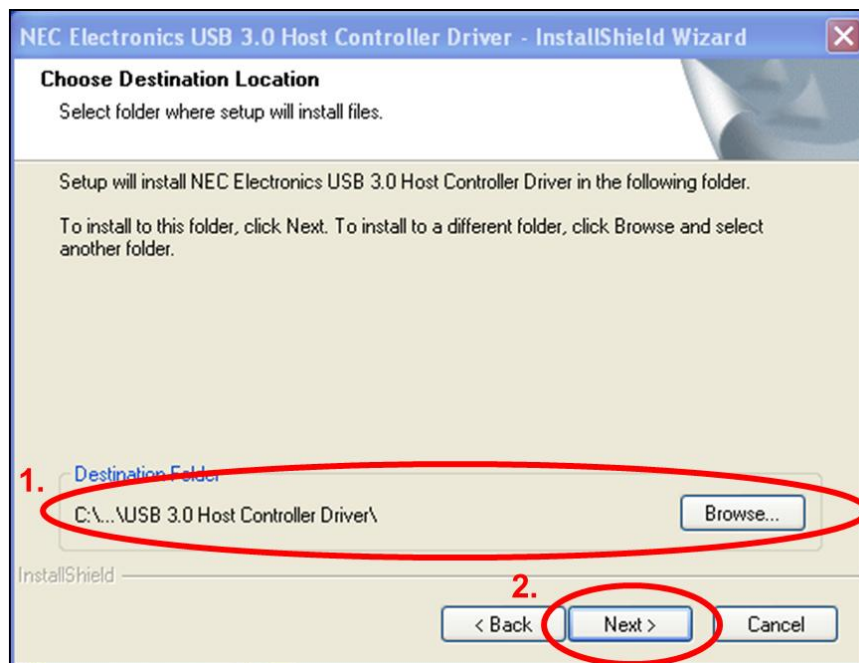
Step 10 License Agreement

1. Select "I accept the terms in the license agreement"
2. Click "Next"



Step 11 Select destination location

1. Select the location where the driver would be installed
2. Click "Next"

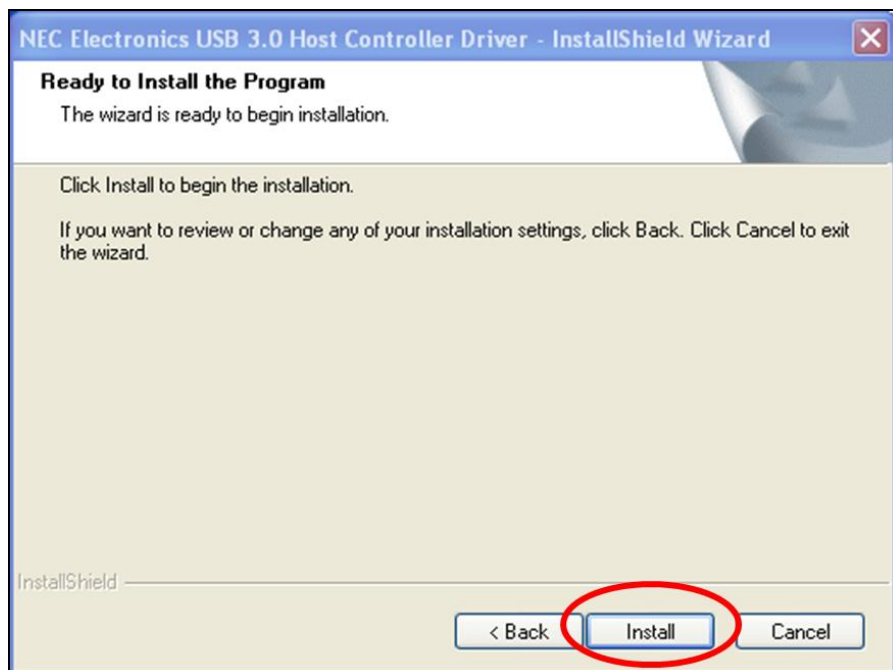


Note

If you are not sure what location to be installed, keep the default setting and click "Next".

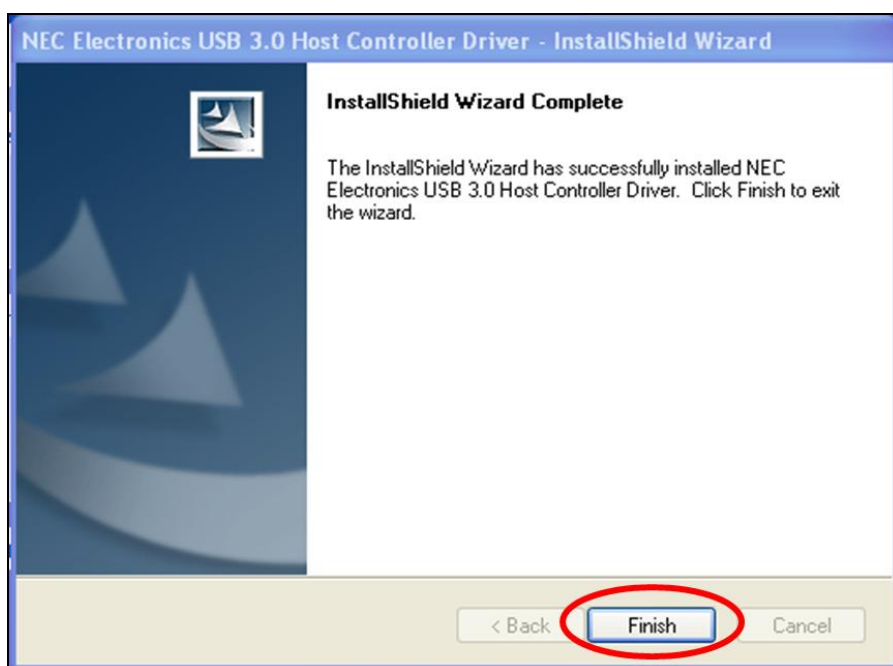
Step 12 Start driver installation

Click "Install"



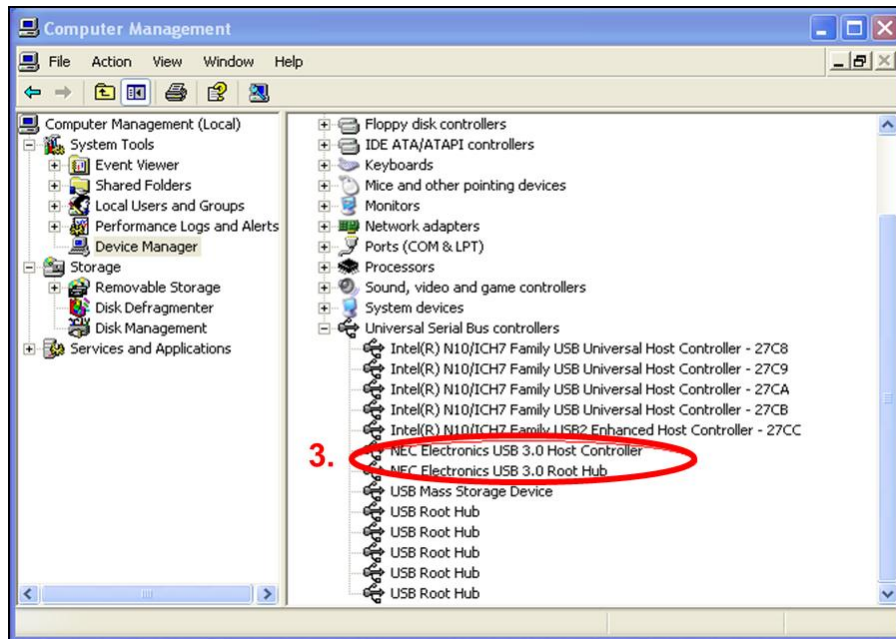
Step 13 Driver installation completed

Click "Finish"



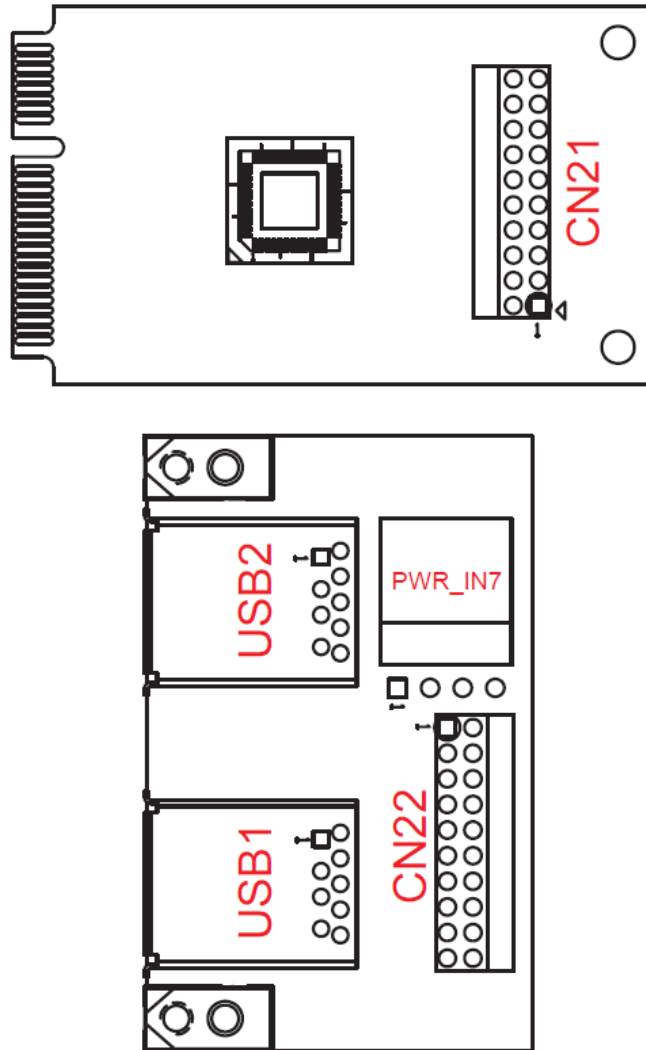
Step 14 Confirm if driver is installed

1. Start "Computer Management" program
2. Go to the route:
My Computer → *Manage* → *Device Manager* → *Universal Serial Bus controllers*
3. You would find the driver names: NEC Electronics USB 3.0 Host Controller and NEC Electronics USB 3.0 Root Hub
4. Device is ready to be used



Appendix

□ Pin Assignments



Board Side Pin Assignments

Pin Header (CN21、CN22)

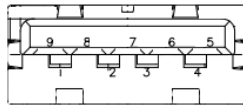
Pin	Description	Pin	Description
1	+5V	2	N/C
3	USB3_R1+	4	+5V
5	USB3_R1-	6	USB3_R2+
7	GND	8	USB3_R2-
9	USB3_T1+	10	GND
11	USB3_T1-	12	USB3_T2+
13	GND	14	USB3_T2-
15	USB2_T1+	16	GND
17	USB2_T1-	18	USB2_T2+
19	GND	20	USB2_T2-

Power Input Connector (PWR_IN7)

Pin	Description
1	+5V
2	GND
3	GND
4	N/C

Device Side Pin Assignments

USB3.0 Standard A Connector (USB1、USB2)



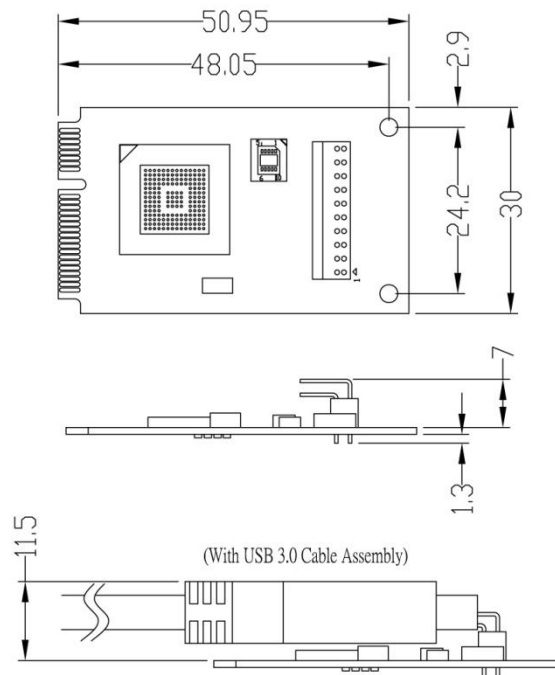
USB1		USB2	
Pin	Description	Pin	Description
1	+5V	1	+5V
2	USB2_T1-	2	USB2_T2-
3	USB2_T1+	3	USB2_T2+
4	GND	4	GND
5	USB3_R1-	5	USB3_R2-
6	USB3_R1+	6	USB3_R2+
7	GND_DRAIN	7	GND_DRAIN
8	USB3_T1-	8	USB3_T2-
9	USB3_T1+	9	USB3_T2+

Technical Reference

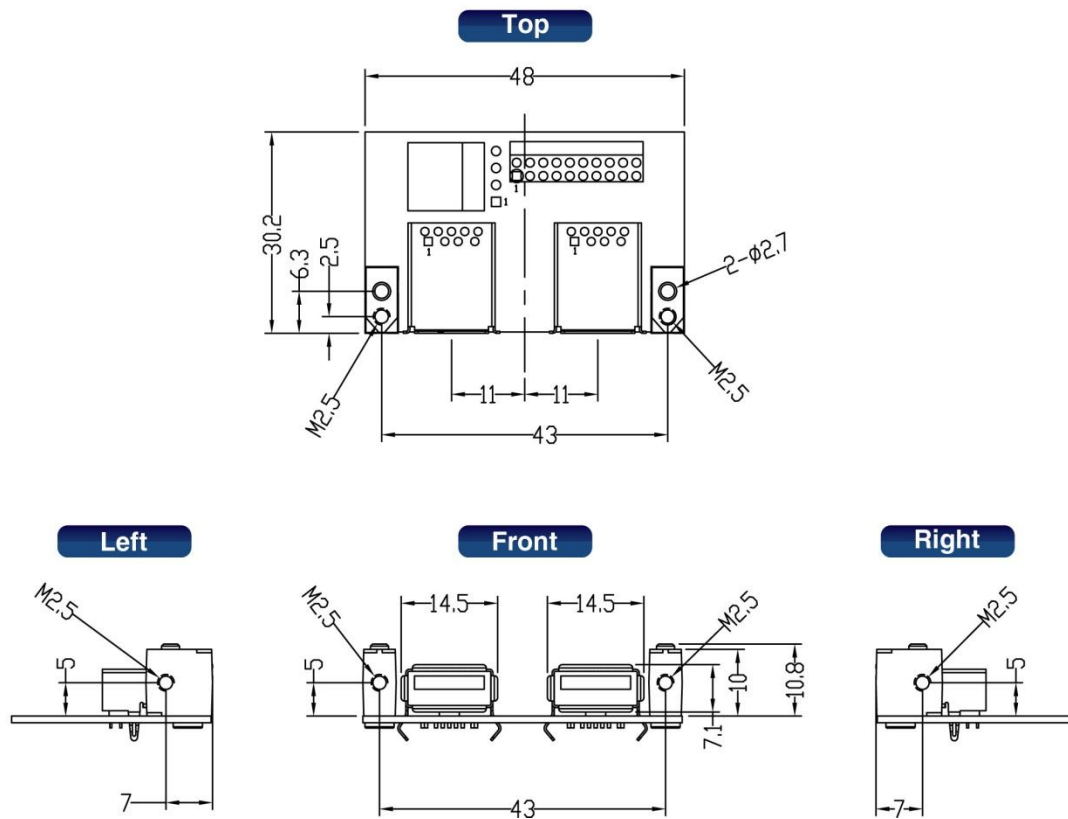
MEC-USB-M002 Specifications

General	
PCI-Express Revision	PCI-Express Base Specification Rev 2.0
PCI-Express Electromechanical Revision	PCI-Express Mini Card Electromechanical Rev. 2.0
Hardware	
Controllers	Renesas (NEC) μ PD720200A
Bus	Single-Lane (x1) PCI-Express with throughput up to 5.0/2.5Gbps
Interface (Connector)	
USB 3.0	2 (USB)
Performance	
Data Transfer Rate	Data Transfer rate of 1.5 / 12 / 480 / 5000 Mbps. Low Speed (1.5Mbps), Full Speed(12Mbps), High Speed(480Mbps), Super Speed(5Gbps)
Driver Support	
Operating Systems	Win 2003, Win XP, Win Vista, Win 7, Win 8
Power Requirement	
Power Consumption	290mA@3.3V
Dimensions	
Width x Length (mm)	30.00 x 50.95
Environmental Limits	
Operating Temperature	-20°C ~ 70°C
Storage Temperature	-20°C ~ 85°C
Humidity	5% ~ 95%
Regulatory Approvals	
EMC	CE, FCC
EMI	EN 55022, EN61000-3-2, EN61000-3-3, FCC Part 15 Subpart B Class B
EMS	En 55024, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11
Reliability	
MTBF	2,942,474 hr
Warranty	3 years

MEC-USB-M002 Dimensions



MEC-USB-M002 Daughter Board Dimensions



❑ Product Warranty Statement

Cervoz products are warranted to be free from manufacturing defects in materials and workmanship starting from the date of delivery. The actual warranty period of Cervoz products vary with product categories. Complete details can be found here:

<http://www.cervoz.com/support/warranty.php>

During the warranty period, we shall, at our option, either repair or replace any product that proves to be defective under normal operation.

Defects, malfunctions, or failures of the warranted product caused by damage resulting from natural disasters (such as by lightening, flood, earthquake, etc.), environmental and atmospheric disturbances, other external forces such as power line disturbances, plugging the board in under power, or incorrect cabling, and damage caused by misuse, abuse, and unauthorized alteration or repair, and the product in question is either software, or an expendable item (such as a fuse, battery, etc.), are not warranted.

RMA Instruction

- Customers must fill in Cervoz Return Merchandise Authorization (RMA) Request Form and obtain a RMA number prior to returning a defective product to Cervoz for service.
- Customers must collect all the information about the problems encountered and note anything abnormal and describe the problems on the "Cervoz Service Form" for the RMA number application process.
- Charges may be incurred for certain repairs. Cervoz will charge for repairs to products whose warranty period has expired. Cervoz will also charge for repairs to products if the damage resulted from acts of God, environmental or atmospheric disturbances, or other external forces through misuse, abuse, or unauthorized alteration or repair. If charges will be incurred for a repair, Cervoz lists all charges, and will wait for customer's approval before performing the repair.
- Customers agree to insure the product or assume the risk of loss or damage during transit, to prepay shipping charges, and to use the original shipping container or equivalent.
- Customers can send back faulty products with or without accessories (manuals, cable, etc.) and any components from the card. If the components were suspected as part of the problems, please note clearly. Otherwise, Cervoz is not responsible for the devices/parts.
- Repaired items will be shipped along with a "Repair Report" detailing the findings and actions taken.

Limitation of Liability

Cervoz' liability arising out of the manufacture, sale, or supplying of the product and its use, whether based on warranty, contract, negligence, product liability, or otherwise, shall not exceed the original selling price of the product. The remedies provided herein are the customer's sole and exclusive remedies. In no event shall Cervoz be liable for direct, indirect, special or consequential damages whether based on contract of any other legal theory.